Airport Engineering MCQ Question Answer

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Question: 1. To cope up high temperature of 196°C, the taxi ways and aprons are constructed with

Option A. Asphaltic concrete
Option B. Rubberised tar concrete
Option C. Plain concrete
Option D. All the above

Question: 2. If the width of the approach area near the runway end is 150 m, the width of the approach area at a distance of 3 kilometres from runway end will be

Option A. 1500 m
Option B. 1200 m
Option C. 1000 m
Option D. 800 m

Question: 3. The slope of the transitional surface for A, B and C type of runway shall be

Option A. 1 : 5
Option B. 1 : 7
Option C. 1 : 10
Option D. 1 : 12

Question: 4. Assertion A: The width of a taxiway is smaller than the runway width. Reason R: The speed of the aircraft on a taxiway is greater than that on runway. Select your answer based on coding system given below

Option A. Both A and R is true and R is the correct explanation of A
Option B. Both A and R is true but R is not the correct explanation of A
Option C. A is true but R is false
Option D. A is false but R is true

Question: 5. The height of the pilot's eye above the runway surface is assumed

Option A. 1 m
Option B. 3 m
Option C. 4 m
Option D. 5 m

Question: 6. The lift off distance is the distance along the centre of the runway between the starting point and

Option A. End of the runway
Option B. End of stop-way
Option C. Point where air craft becomes air borne

Option D. Point where air craft attains a height of 10.7 m

Question: 7. Maximum gross takeoff weight of an aircraft is

Option A. Equal to the maximum structural landing weight
Option B. Less than the maximum structural landing weight
Option C. More than the maximum structural landing weight
Option D. Equal to the empty operating weight plus the payload

Question: 8. As per ICAO, the minimum basic runway length for A and E type of airport will be

Option A. 1500 m and 600 m
Option B. 2100 m and 750 m
Option C. 1500 m and 750 m
Option D. 2100 m and 600 m

Question: 9. Conical surface of the approach area rises outwards

Option A. 1 in 10
Option B. 1 in 15
Option C. 1 in 20
Option D. 1 in 25

Question: 10. Consider the following statements: Wind rose diagram is used for the purposes of
1. Runway orientation
2. Estimating the runway capacity
3. Geometric design of holding apron of these statements

Option A. 1 and 2 are correct
Option B. 2 and 3 are correct
Option C. 1 and 3 are correct
Option D. 1 alone is correct

Question: 11. Zero fuel weight of an aircraft is:

Option A. Equal to empty operating weight
Option B. Equal to maximum landing weight
Option C. Less than empty operating weight
Option D. Equal to sum of empty operating weight and the maximum pay load

Question: 12. The landing and takeoff of the air craft is made against the direction of wind. In no case the centre line of the runway should make an angle with the wind direction exceeding

Option A. 10°
Option B. 20°
Option C. 30°
Option D. 40°

Question: 13. Pick up the component not applicable to aeroplanes

Option A. Wings
Option B. Engines
Option C. Air screw
Option D. None of these

Question: 14. The runway orientation is made so that landing and takeoff are

Option A. Against the wind direction
Option B. Along the wind direction
Option C. Perpendicular to wind direction
Option D. None of these

Question: 15. The engine failure case for determining the basic runway length may require

Option A. Only clearway
Option B. Only stop way
Option C. Either a clearway or a stop-way
Option D. Either a clearway or a stop-way or both

Question: 16. The capacity of parallel runway pattern depends upon

Option A. Weather conditions and navigational aids available
Option B. Lateral spacing between two runways and weather conditions
Option C. Lateral spacing between two runways and navigational aids available
Option D. Lateral spacing between two runways, weather conditions and navigational aids available.

Question: 17. The width and interval of transverse centre line bars along the extended centre line of runway, in approach lighting system are

Option A. 3 m and 30 m
Option B. 4.2 m and 30 m
Option C. 4.2 m and 50 m
Option D. 3 m and 45 m

Question: 18. The slope of the obstruction clearance line from the boundary of the heliport should be

Option A. 1 : 2
Option B. 1 : 5
Option C. 1 : 8
Option D. 1 : 40

Question: 19. Pick up the correct statement from the following:

Option A. Air screw converts the energy given by the engine into speed
Option B. The propellers which are driven by turbine engines, are technically called turboprops
Option C. The aircrafts which obtain the thrust directly from turbine engine, are called turbo-jets
Option D. All the above

Question: 20. Pick up the correct statement from the following:

Option A. The centre line of the approach area coincides with that of the runway
Option B. Approach areas are measured in horizontal surfaces
Option C. Obstruction clearance surface and approach surface are same
Option D. All the above

Question: 21. Pick up the incorrect statement from the following:

Option A. In single engine aeroplanes, the engine is provided in the nose of the aircraft
Option B. In double engine aeroplanes, one engine on either wing is placed symmetrically
Option C. In three engine aeroplanes, two engines are placed on both wings and one engine is placed in the tail
Option D. None of these

Question: 22. As per ICAO, for airports serving big aircrafts, the crosswind component should not exceed

Option A. 15 kmph
Option B. 25 kmph
Option C. 35 kmph
Option D. 45 kmph

Question: 23. According to the International Civil Aviation Organisation (I.C.A.O.), the runway lengths of aerodromes, have been coded by

Option A. Seven English alphabets
Option B. Last Seven English alphabets
Option C. First Seven English alphabets
Option D. First seven natural numbers

Question: 24. Which of the following is an example of failure in flexible pavements?

Option A. Alligator cracking
Option B. Mud pumping
Option C. Warping cracks
Option D. Shrinkage cracks

Question: 25. Beaufort scale is used to determine

Option A. Strength of winds
Option B. Direction of winds
Option C. Height of air-crafts
Option D. None of these

Question: 26. If the monthly mean of average daily temperature for the hottest month of the year is 25°C and the monthly mean of the maximum daily temperature of the same month of the year is 46°C, the airport reference temperature is

Option A. 32°C

Option B. 35.5°C

Option C. 48°C

Option D. 25°C

Question: 27. Speed of

Option A. Sound at 0°C is 1190 kmph

Option B. Sound varies 2.4 kmph per degree centigrade rise in temperature

Option C. Sound at 0°C is called one Mach

Option D. All the above

Question: 28. For night landing, the thresholds are lighted

Option A. Green

Option B. Red

Option C. White

Option D. Yellow

Question: 29. Pick up the incorrect statement from the following:

Option A. L.O.M. is installed at 7.2 km from the threshold

Option B. L.M.M. is installed at 1.0 km from the threshold

Option C. Localizer antenna is installed at 300 m from the other end of the runway

Option D. Glide slope antenna is installed at the centre of the runway about 150 m on one side

Question: 30. The coordinates of the ends of a runway are (5000, 5000) and (8000, 7000). The co-ordinates of another runway are (4600, 5100) and (7000, 5300). The co-ordinates of the A.R.P. are

Option A. (6500, 6000)

Option B. (5800, 5200)

Option C. (61500, 5600)

Option D. (8000, 7000)

Question: 31. For Class A Air port the difference of reduced levels of higher and lower edges of the conical surface, is

Option A. 25 m

Option B. 50 m

Option C. 75 m

Option D. 100 m

Question: 32. The reduced level of the proposed site of an air port is 2500 m above M.S.L. If the recommended length by I.C.A.O. for the runway at sea level is 2500 m, the required length of the runway is

Option A. 2500 m

Option B. 3725 m

Option C. 3000 m

Option D. 3250 m

Question: 33. The length of a runway under standard atmospheric conditions is 1800 m. If the actual reduced level of the site is 1200 m, the design length of the runway is

Option A. 2360 m
Option B. 2460 m
Option C. 2560 m
Option D. 2660 m

Question: 34. An airport has 4 gates. If the weighted average gate occupancy time is 30 minutes and gate utilisation factor is 0.5, then the capacity of the gate will be

Option A. 1 aircraft per hour
Option B. 2 aircrafts per hour
Option C. 4 aircrafts per hour
Option D. 16 aircrafts per hour

Question: 35. As per ICAO recommendation, minimum width of safety area for instrumental runway should be

Option A. 78 m
Option B. 150 m
Option C. 300 m
Option D. 450 m

Question: 36. Assertion A : Airport capacity during IFR conditions is usually less than that during VFR conditions. Reason R: During clear weather condition (VFR), the aircrafts on final approach to runway can be spaced closer during poor visibility conditions. Select your answer based on the coding system given below:

Option A. Both A and R is true and R is the correct explanation of A
Option B. Both A and R is true but R is not the correct explanation of A
Option C. A is true but R is false
Option D. A is false but R is true

Question: 37. The length of runway is increased per 300 m rise above M.S.L.

Option A. 3 %
Option B. 4 %
Option C. 5 %
Option D. 7 %

Question: 38. The strength of winds is measured with the help of

Option A. Beaufort scale
Option B. Wind indicator
Option C. Barometers
Option D. None of these

Question: 39. For supersonic transport aircraft, the minimum turning radius of taxiway is

Option A. 60 m
Option B. 120 m
Option C. 180 m
Option D. 240 m

Question: 40. Pick up the correct statement from the following:

Option A. F.I.R. stands for flight information regions
Option B. Radius of control area is 160 km
Option C. Radius of control zone is 40 km
Option D. All the above

Question: 41. Total correction for elevation, temperature and gradient for a runway should not be more than

Option A. 15 %
Option B. 20 %
Option C. 25 %
Option D. 35 %

Question: 42. Consider the following statements regarding ICAO recommendation for correction to basic runway length
1. The basic runway length should be increased at the rate of 7 percent per 300 m rise in elevation above the mean sea level.
2. The basic runway length after having been corrected for elevation should be further increased at the rate of 1 percent for every 1°C rise in airport reference temperature above the standard atmospheric temperature at that elevation.
3. The runway length after having been corrected for elevation and temperature should be further increased at the rate of 20% for every 1 percent of effective gradient. Of these statements

Option A. 1 and 2 are correct
Option B. 2 and 3 are correct
Option C. 1 and 3 are correct
Option D. 1, 2 and 3 are correct

Question: 43. The total length of a runway is 1000 m. The elevation at distance 0,200 m, 400 m, 600 m, 800 m and 1000 m are 100.0 m, 99.2 m, 101.0 m, 101.8 m, 101.4 m and 101.0 m respectively. The effective gradient of runway will be.

Option A. 0.10 %
Option B. 0.26 %
Option C. 0.43 %
Option D. 0.65 %

Question: 44. The maximum length and pavement strength of the runway is that of

Option A. A 1

Option B. B 2

Option C. B 3

Option D. G 7

Question: 45. The reduced levels of the ends A and B of a runway are 3025 m and 3035 m and that of its mid-point is 3015 m. The reduced level of the horizontal surface, is

Option A. 3070 m

Option B. 3060 m

Option C. 3075 m

Option D. 3015 m

Question: 46. As per ICAO, for A, B, and C type of airports, maximum effective, transverse and longitudinal grades in percentage respectively are

Option A. 1.0, 1.5 and 1.5

Option B. 1.0, 1.5 and 2.0

Option C. 1.5, 1.5 and 2.0

Option D. 2.0, 2.0 and 2.0

Question: 47. Two single runways may be arranged so as to have

Option A. L-shape

Option B. T-shape

Option C. X-shape

Option D. All the above

Question: 48. In instrument landing system

Option A. L.O.M. and L.M.M. are installed on one side and Localizer antenna on the other side

Option B. L.O.M. and Localizer are installed on one side and L.M.M. on the other side

Option C. Localizer and L.M.M. are installed on one side and L.O.M. on the other side

Option D. None of these

Question: 49. According to ICAO, all markings on the runways are

Option A. Yellow

Option B. White

Option C. Black

Option D. Red

Question: 50. Which of the following factors are taken into account for estimating the runway length required for aircraft landing?

1. Normal maximum temperature
2. Airport elevation
3. Maximum landing weight
4. Effective runway gradient Select the correct answer using the codes given below Codes:

Option A. 1, 2, 3 and 4

Option B. 1, 3 and 4
Option C. 2 and 3
Option D. 1, 2 and 4

Question: 51. The size of landing area for multi engine helicopters operating under 1 FR conditions is

Option A. 22.5 m × 22.5 m
Option B. 30 m × 30 m
Option C. 22.5 m × 30 m
Option D. 60 m × 120 m

Question: 52. From the end of an instrumental runway, the approach surface rises outwards

Option A. 1 in 20
Option B. 1 in 30
Option C. 1 in 40
Option D. 1 in 50

Question: 53. The distance between main gears is 10 m, and the distance of nose gear from centre of main gears is 30 m. If the angle of turning is 60°, the distance of centre of rotation from the nearer main gear, is

Option A. 12.30 m
Option B. 11.30 m
Option C. 10.30 m
Option D. 9.30 m

Question: 54. For the taxiways, the following statement is true

Option A. The maximum longitudinal grade is 3%
Option B. The permissible rate of change of grade is 1%
Option C. The permissible transverse grade is 1.5%
Option D. All the above

Question: 55. The thickness design of the pavement, is decided on the load carried by

Option A. Main gears
Option B. Nose wheel
Option C. Tail wheel
Option D. All the above

Question: 56. The fuse large includes

Option A. Passengers chamber
Option B. Pilot's cabin
Option C. Tail of aircraft
Option D. All the above

Question: 57. In Intrumental landing system, the middle markers are located

Option A. Along the extended centre line of runway end
Option B. About 1 km. ahead of the runway threshold
Option C. At the runway threshold
Option D. About 7 km. ahead of the runway threshold

Question: 58. An aircraft is flying in an atmosphere of 30°C with a speed of 1260 km ph. Its speed is known as

Option A. Subsonic
Option B. Sonic
Option C. Super-sonic
Option D. Mach

Question: 59. A gradient of + 0.08% is followed by a gradient of - 0.07%. If the permissible rate of change of grade is 0.003 per 30 metres, the length of the transition curve, is

Option A. 150 m
Option B. 140 m
Option C. 160 m
Option D. 175 m

Question: 60. The bearing of the longest line of a wind rose is S 45° E, the bearing of the runway will be numbered

Option A. 135°
Option B. 31
Option C. 13
Option D. Both (c) and (d)

Question: 61. The best direction of a runway is along the direction of

Option A. Longest line on wind rose diagram
Option B. Shortest line on the wind rose diagram
Option C. Line clear of wind rose diagram
Option D. None of these

Question: 62. The threshold markings are

Option A. 4 m wide
Option B. 1 m clear space between adjacent
Option C. Placed symmetrically on either side of the runway centre line
Option D. All the above

Question: 63. According to I.C.A.O. the recommended length of air ports is decided on

Option A. Sea level elevation
Option B. Standard sea level temperature (15°C)

Option C. Effective gradient percentage
Option D. All the above

Question: 64. Pick up the correct abbreviation from the following:

Option A. L.M.M. (low powered middle marker)
Option B. V.H.F, (very high frequency)
Option C. L.O.M. (low powered outer marker)
Option D. All the above

Question: 65. Effective length of a runway is the distance between

Option A. Ends of the runway
Option B. Point of intersection of the obstruction clearance line and the extended plane of the runway surface, and the other end of the runway
Option C. Point of intersection of the glide path and the extended plane of the runway surface and the other end of the runway
Option D. Ends of the clear way on either side

Question: 66. International Civil Aviation Organisation (I.C.A.O.) was set up at Montreal (Canada), in

Option A. 1929
Option B. 1939
Option C. 1947
Option D. 1950

Question: 67. Pick up the correct statement from the following:

Option A. Approximate geometric centre of the landing area, is called air port reference point
Option B. The boundaries of horizontal surface and conical surface are marked with reference to air port reference point
Option C. The location of the air port on a map is the position of air port reference point
Option D. All the above

Question: 68. Pick up the correct statement from the following:

Option A. The speed of the aircraft relative to the ground, is called cruising speed
Option B. The speed of the aircraft relative to wind, is called air speed
Option C. When wind is blowing the direction of the flight, air speed is less than cruising speed
Option D. All the above

Question: 69. Pick up the correct statement from the following:

Option A. Minimum turning radius of aircrafts decides the size of the apron and the radius of the curves at taxi-ends
Option B. Take off and landing distances for an aircraft, determine the minimum runway length
Option C. The length of the normal haul of the air craft decides the frequency of operation
Option D. All the above

Question: 70. Wing loading of an aircraft is

Option A. Load of the wings
Option B. Gross total weight of the aircraft/ load of the wings
Option C. Gross total weight of the aircraft/ wing area
Option D. Gross total weight of the aircraft/total available H.P of engines

Question: 71. According to I.C.A.O. all markings on the runways are painted white and on taxiways

Option A. Black
Option B. Red
Option C. Yellow
Option D. Green

Question: 72. The length of runway under standard conditions is 2000 m. The elevation of airport site is 300 m. Its reference temperature is 33.05°C. If the runway is to be constructed with an effective gradient of 0.25 percent, the corrected runway length will be

Option A. 2500 m
Option B. 2600 m
Option C. 2700 m
Option D. 2800 m

Question: 73. Pick up the correct statement from the following:

Option A. The basic length of a runway is increased at a rate of 7% per 300 m of elevation of M.S.L.
Option B. The standard temperature at the site is obtained by reducing the standard sea level temperature of 15°C at the rate of 6.5°C per 1000 m rise in elevation
Option C. The aerodrome reference temperature is the monthly mean of the mean daily temperature for the hottest month of the year
Option D. All the above

Question: 74. Assertion A : The ratio of arriving and departing aircrafts influences the airport Capacity: Reason R : Landing operation is generally given priority over the taking off operation. Select your answer based on the coding system given below:

Option A. Both A and R is true and R is the correct explanation of A
Option B. Both A and R is true and R is not the correct explanation of A
Option C. A is true but R is false
Option D. A is false but R is true

Question: 75. The main disadvantage of angle nose out parking configuration of aircraft is that the

Option A. Aircraft rear loading door is far away from terminal building.
Option B. Hot blast is directed towards the terminal building
Option C. Overall apron area required is more
Option D. All the above

Question: 76. For determining the basic runway length, the landing case requires that aircraft should come to a stop within p % of the landing distance. The value of p is

Option A. 40 %
Option B. 50 %
Option C. 60 %
Option D. 75 %

Question: 77. The runway length after correcting for elevation and temperature is 2845 m. If the effective gradient on runway is 0.5 percent then the revised runway length will be

Option A. 2845 m
Option B. 2910 m
Option C. 3030 m
Option D. 3130 m

Question: 78. The bearing of the runway at threshold is 290°, the runway number is

Option A. N 70° W
Option B. 290°
Option C. 29°
Option D. W 20° N

Question: 79. Runway threshold is indicated by a series of parallel lines starting from a distance of

Option A. 3 m from runway end
Option B. 6 m from runway end
Option C. 10 m from runway end
Option D. 15 m from runway end

Question: 80. According to I.C.A.O. the slope of transitional surface at right angles to the centre line of runway, is kept

Option A. 1 in 4
Option B. 1 in 5
Option C. 1 in 6
Option D. 1 in 7

Question: 81. For the proposed air port, the survey project provides

Option A. Master plan
Option B. Topographic plan
Option C. Grading plan
Option D. All the above

Question: 82. Castor angle is defined as the angle

Option A. Formed by the longitudinal axis of the aircraft and the direction of movement of the nose

gear

Option B. Between the direction of wind and the longitudinal axis of the runway

Option C. Between the true speed of the aircraft and the crosswind component

Option D. Between the horizontal and the fuselage axis

Question: 83. Calm period is the percentage of time during which wind intensity is less than

Option A. 4.8 kmph

Option B. 6.4 kmph

Option C. 8.0 kmph

Option D. 9.6 kmph

Question: 84. Which of the following is used for servicing and repairs of the aircraft?

Option A. Apron

Option B. Hanger

Option C. Terminal building

Option D. Holding apron

Question: 85. As per ICAO recommendation, the rate of change of longitudinal gradient per 30 m length of vertical curve for A and B type of airports is limited to a maximum of

Option A. 0.1 %

Option B. 0.2 %

Option C. 0.3 %

Option D. 0.4 %

Question: 86. Airport elevation is the reduced level above M.S.L. of

Option A. Control tower

Option B. Highest point of the landing area

Option C. Lowest point of the landing area

Option D. None of these

Question: 87. The air is blowing at a speed of 75 knots in the direction of the aircraft flying at a ground speed of 775 knots. The air speed of the aircraft, is

Option A. 775 knots

Option B. 75 knots

Option C. 850 knots

Option D. 675 knots

Question: 88. The minimum width of clearway is

Option A. 50 m

Option B. 100 m

Option C. 150 m

Option D. 250 m

Question: 89. In approach areas of runways equipped with instrumental landing facilities any object within 4.5 km distance from runway end shall be considered as an obstruction if its height is more than

Option A. 20 m
Option B. 30 m
Option C. 45 m
Option D. 51 m

Question: 90. According to the International Civil Aviation Organisation (I.C.A.O.) the strength of runway pavements, have been coded by

Option A. Seven English alphabets
Option B. Last Seven English alphabets
Option C. First Seven English alphabets
Option D. First seven numbers

Question: 91. The maximum value of the angle of turning of the nose gear large jet aircrafts, is limited to

Option A. 20°
Option B. 30°
Option C. 45°
Option D. 60°

Question: 92. The centre to centre spacing of heliport lighting along the periphery of landing and takeoff area should be

Option A. 2.5 m
Option B. 5.0 m
Option C. 7.5 m
Option D. 10.0 m

Question: 93. If lift off distance of an craft is 2000 m, the clear way at the end of the runway should not be less than

Option A. 145 m
Option B. 152.5 m
Option C. 162.5 m
Option D. 172.5 m

Question: 94. Pick up the correct statement from the following:

Option A. Landing speed is directly proportional to the wing loading
Option B. Wing loading remaining constant, the take off distance is directly proportional to the powder loading
Option C. Neither (a) nor (b)
Option D. Both (a) and (b)

Question: 95. Pick up the correct statement from the following:

Option A. Runway edge from the landing side, is called threshold
Option B. Localizer indicates to the pilot his position with respect to the proposed alignment
Option C. The glide slope indicates the correct angle of descent
Option D. All the above

Question: 96. Pick up the correct statement from the following:

Option A. Tar concrete pavements are suitable if fuel spillage occurs
Option B. Rubberised tar concrete hot blast as well as spillage
Option C. Epoxy asphalt concrete sets in very small time
Option D. All the above

Question: 97. Pick up the correct statement from the following:

Option A. Approach zone survey is carried out to determine the elevations of the protruding obstructions above horizontal, conical and transitional surfaces
Option B. The wind data of an air port is depicted in the form of a chart known as wind rose
Option C. The landing and takeoff of the air craft is made against the wind direction
Option D. All the above

Question: 98. Pick up the correct statement from the following:

Option A. The distance between the points of intersection of the extreme tangents to the transition curve is kept greater than 7500 m × sum of grade changes at the point of intersection
Option B. The rate of change of grade is limited to 0.3% per 30 m length of the curve
Option C. According to I.C.A.O. the maximum longitudinal gradient along a runway is limited to 1.5%
Option D. All the above

Question: 99. The depressions and undulations in the pavement, are caused due to

Option A. Improper compaction of sub-grade
Option B. Impact of heavy wheel loads
Option C. Punching effect
Option D. All the above

Question: 100. For the proposed runway stated in if the aerodrome reference temperature is 17°.2, the net designed length of the runway is

Option A. 2716 m
Option B. 2816 m
Option C. 2916 m
Option D. 3016 m

Answer Sheet

1	D	
2	B	

3	B	
4	C	
5	B	
6	A	
7	C	
8	D	
9	C	
10	D	
11	D	
12	C	
13	D	
14	A	
15	D	
16	D	
17	B	
18	C	
19	D	
20	D	
21	C	
22	C	
23	C	
24	A	
25	A	
26	C	
27	D	
28	A	
29	D	
30	C	
31	D	
32	B	

33	C	
34	C	
35	C	
36	A	
37	D	
38	A	
39	C	
40	D	
41	D	
42	A	
43	B	
44	A	
45	C	
46	A	
47	D	
48	A	
49	B	
50	D	
51	D	
52	D	
53	A	
54	D	
55	A	
56	D	
57	B	
58	B	
59	A	
60	D	
61	A	
62	D	

63	D	
64	D	
65	B	
66	C	
67	D	
68	D	
69	D	
70	C	
71	C	
72	C	
73	D	
74	A	
75	B	
76	C	
77	C	
78	C	
79	B	
80	D	
81	D	
82	A	
83	B	
84	B	
85	A	
86	B	
87	D	
88	C	
89	B	
90	D	
91	D	
92	C	

93	D	
94	D	
95	D	
96	D	
97	D	
98	D	
99	D	
100	B	